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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/605,250	09/17/2003	Tzu-Hung Cheng	PMXP0159USA	2249

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NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION
P.O. BOX 506
MERRIFIELD, VA 22116

EXAMINER	
SMITH, JEFFREY S	
ART UNIT	**PAPER NUMBER**
2624	

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	04/05/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 04/05/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

winstonhsu.uspto@gmail.com
Patent.admin.uspto.Rcv@naipo.com
mis.ap.uspto@naipo.com.tw

Office Action Summary	Application No.	Applicant(s)	
	10/605,250	CHENG, TZU-HUNG	
	Examiner	Art Unit	
	Jeffrey S. Smith	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 September 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *17 September 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Requirement For Information

1. Applicant and the assignee of this application are required under 37 CFR 1.105 to provide the following information that the examiner has determined is reasonably necessary to the examination of this application.

2. The information is required to document the level of skill and knowledge in the art of unsharp masking.

Is the inventor or the assignee aware of work by another that includes "generating an energy ratio of a band-pass image signal and the image signal according to the standard deviation of a first low pass signal of the first low pass filter and a second low pass signal of the second low pass filter?"

Is the inventor or the assignee aware of work by another that includes "generating an energy ratio of a band-pass image signal?"

Is the inventor or the assignee aware of work by another that includes "generating an energy ratio according to the standard deviation?"

Is the inventor or the assignee aware of work by another that includes "generating a weighting coefficient of the image signal according to the energy ratio?"

3. In response to this requirement, please provide the title, citation and copy of each publication that any of the applicants relied upon to develop the disclosed subject matter that describes the applicant's invention, particularly as to developing the energy ratio of a band-pass image signal, and also as to developing the weighting coefficient of the image signal according to the energy ratio. For each publication, please provide a

concise explanation of the reliance placed on that publication in the development of the disclosed subject matter.

4. In response to this requirement, please state whether any search of prior art was performed. If a search was performed, please state the citation for each prior art collection searched. If any art retrieved from the search was considered material to demonstrating the knowledge of a person having ordinary skill in the art to the disclosed method of unsharp masking, please provide the citation for each piece of art considered and a copy of the art.

For example, if a search report was prepared by a foreign Patent Office, please submit a copy of the search report. If a rejection was made by a foreign Patent Office, please submit a copy of the rejection.

5. **Applicant is reminded that failure to fully reply to this requirement for information will result in a holding of abandonment.** This requirement is an attachment of the enclosed Office action. A complete reply to the enclosed Office action must include a complete reply to this requirement. The time period for reply to this requirement coincides with the time period for reply to the enclosed Office action.

Drawings

6. The drawings are objected to because of the following informalities.

In the drawings, the term "vawe" is not a word and it is not discussed in the specification.

The symbol for convolution shown in the drawings is inconsistent with the multiple symbols shown in the specification.

Figure 6, step 112, the second line begins with a comma.

Figures 5 and 7 show functions in the transform domain, lower case h should be upper case H. For example, h(s) should be H(s). This is an example, similar corrections must be made for all other instances of h in figures 5 and 7.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. **The objection to the drawings will not be held in abeyance.**

Specification

7. 35 U.S.C. 112, first paragraph, requires the specification to be written in "full, clear, concise, and exact terms." The specification is replete with terms which are not clear, concise and exact. The specification should be revised carefully in order to comply with 35 U.S.C. 112, first paragraph. Examples of some unclear, inexact or verbose terms used in the specification are:

Throughout the specification, I(x,y) is listed as l(x,y). The lower case "l" (letter no. 12 in the alphabet) should be changed to upper case I (letter 9). This is true for regularly sized letters such as those in paragraph 40, as well as subscripted letters such as those in paragraph 44. These two paragraphs are mentioned as examples, these changes must be made to the entire specification.

Also, the symbol for convolution is different throughout the specification. For example, the symbol in paragraph 43 is different than the symbol in paragraph 44 and paragraph 59. Only one convolution symbol can be used in the specification and it must be identical to the symbol shown in the drawings.

Paragraph 48 has an open paren.

The specification refers to the low pass filter signals shown in the figures in the x,y domain, yet the figures show the signals in the S domain. For example, the specification discusses the first low pass filter signal as $h_1(x,y)$ which is in the x,y domain, yet figure 5 shows $h_1(S)$ in the transform domain. The specification must be consistent with the drawings.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 1 recites "generating an energy ratio of a band-pass image signal and the image signal according to the standard deviation of a first low pass signal of the first low pass filter and a second low pass signal of the second low pass filter."

The energy ratio as defined in paragraph 49 of the application is a function of the image signal, yet paragraph 54 of the specification equates the energy ratio to a function that is independent of the image signal. One of ordinary skill in the art is unable to make and use an energy ratio that is dependent on the image signal and simultaneously independent of the image signal.

Claim 11 has the same problem.

Claim Rejections - 35 USC § 101

9. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

10. Claims 1-20 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 1 recites a mathematical function that is not limited to a practical application. The steps of providing, generating, providing, generating and adjusting are a mathematical algorithm. Claims 2-20 have the same problem.

11. Claims 1-20 are rejected under 35 U.S.C. 101 because the disclosed invention is inoperative and therefore lacks utility.

Claim 1 recites "generating an energy ratio of a band-pass image signal and the image signal according to the standard deviation of a first low pass signal of the first low pass filter and a second low pass signal of the second low pass filter."

The energy ratio as defined in paragraph 49 of the application is a function of the image signal, yet paragraph 54 of the specification equates the energy ratio to a function that is independent of the image signal. An energy ratio that is dependent on the image signal and simultaneously independent of the image signal does not exist and therefore the method is inoperative. Claims 2-20 have the same problem.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent Application Publication Number 2004/0176062 and U.S. Patent Number 7,020,448 discuss the use of an energy ratio in a filter.

U.S. Patent Application Publication Number 2006/0039622 discusses the use of a band-pass filter and a standard deviation in paragraph 103 for sharpness enhancement.

U.S. Patent Number 6,628,842 discusses generating a sharpness enhancing coefficient for performing unsharp masking in the abstract.

U.S. Patent Number 5,805,721 shows in figure 6b a bandpass filter for unsharp masking.

U.S. Patent Number 5,880,767 in column 6 lines 45-56 shows a bandpass filter for unsharp masking.

U.S. Patent Number 6,005,983 in the abstract discusses a bandpass filter for unsharp masking.

U.S. Patent Application Publication Number 2007/0009145 uses an equalization method of unsharp masking so that the brightness of the image is preserved as the edges are enhanced as discussed in paragraph 48.

U.S. Patent Number 6,993,203 uses brightness correction in unsharp masking as shown in figure 2.

U.S. Patent Number 6,788,824 provides parameters used in performing unsharp masking as shown in figure 1.

U.S. Patent Number 5,038,388 uses an adaptive amplification based on a statistical variance to perform unsharp masking as shown in figure 2.

U.S. Patent Number 6,614,944 shows in figures 4a and 4b a method of performing unsharp masking that preserves the luminance values.

U.S. Patent Number 6,965,702 in the summary discusses using unsharp masking with a standard deviation.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey S. Smith whose telephone number is 571 270-1235. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu can be reached on 571 272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JSS
March 30, 2007

JINGGE WU
SUPERVISORY PATENT EXAMINER